

WHAT IS CLAIMED IS:

1. A stable area detection device for a platen gap formed between a head and an upper surface of a platen, in a platen gap adjustment device, the platen gap adjustment device

5 including

a carriage guide shaft,

a guide shaft gear fixed to an end of the carriage guide shaft,

a gap adjuster cam rotatable integrally with the guide  
10 shaft gear and formed in a shape to change the platen gap in a plurality of platen gap stages,

a cam follower for the gap adjuster cam, and

a drive motor for driving the guide shaft gear to rotate,

wherein the carriage guide shaft is moved relatively to  
15 the platen so that the platen gap is adjusted by driving the drive motor to rotate the gap adjuster cam,

the gap adjuster cam is configured so as to provide a plurality of stable areas corresponding to the platen gap stages where the platen gap is constant while a rotational phase of  
20 the gap adjuster cam varies in a predetermined range and

a plurality transition areas where the platen gap changes between the stable areas as the rotational phase of the gap adjuster cam varies;

wherein a stable area detection sensor is provided so  
25 as to face to a rotational member which rotates synchronously

with the gap adjuster cam, and

a detection object in correspondence with the stable areas of the platen gap is provided on the rotational member.

5 2. The stable area detection device for the platen gap according to Claim 1, wherein the stable area detection sensor includes a light emitting portion and a light receiving portion and

the detection object comprises a light shielding plate  
10 which passes between the light emitting portion and the light receiving portion.

3. The stable area detection device for the platen gap according to Claim 1, wherein the detection object detected  
15 by the detection sensor for the stable areas is formed in correspondence with a central portion in each stable area, other than adjacent portions to the transition areas formed in both ends of said stable area.

20 4. The stable area detection device for the platen gap according to Claim 1, wherein a home position detection sensor is provided so as to face to the rotational member, and

the rotational member is provided with another detection object for the home position detection sensor at a position  
25 where the gap adjuster cam is located in a home position.

5. The stable area detection device for the platen gap according to Claim 4, wherein the position where the gap adjuster cam is located in the home position is a boundary portion between the stable area of a maximum platen gap stage and the transition area adjacent to the stable area of the maximum platen gap stage.

6. The stable area detection device for the platen gap according to Claim 1, wherein the gap adjuster cam includes a restricting mechanism for restricting a rotation thereof so as to be rotatable in a range from the stable area of a minimum platen gap stage to the stable area of the maximum platen gap stage.

7. A recording apparatus which performs a recording on a recording medium, the recording apparatus comprising the stable area detection device of the platen gap according to Claim 1.

8. An liquid ejection apparatus which ejects a liquid on a liquid ejection medium, the liquid ejection apparatus comprising the stable area detection device of the platen gap according to Claim 1.